



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R04-OAR-2020-0718; FRL-9935-01-R4]

Air Plan Approval; NC: Inspection and Maintenance Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve a State Implementation Plan (SIP) revision submitted by the State of North Carolina on December 14, 2020, through the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ), for the purpose of removing Lee, Onslow, and Rockingham Counties from North Carolina's motor vehicle inspection and maintenance (I/M) program. The I/M Program was previously approved into the SIP for use as a component of the State's Nitrogen Oxides (NO_x) Budget and Allowance Trading Program. EPA has evaluated whether this SIP revision would interfere with the requirements of the Clean Air Act (CAA or Act), including EPA regulations related to statewide NO_x emissions budgets. In summary, EPA proposes to find that Lee, Onslow, and Rockingham Counties would continue to attain and maintain the national ambient air quality standards (NAAQS or standards) after removal of the I/M program, and to rely on an emissions inventory comparison to inform its determination that the three counties would continue to attain and maintain the ozone and carbon monoxide (CO) NAAQS. Consequently, EPA is proposing to determine that North Carolina's December 14, 2020, SIP revision is consistent with the applicable provisions of the CAA.

DATES: Comments must be received on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R04-OAR-2020-0718 at <http://www.regulations.gov>. Follow the online instructions for submitting comments.

Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

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I. What is Being Proposed?

The DAQ submitted a SIP revision on December 14, 2020, seeking to remove Lee, Onslow, and Rockingham counties from North Carolina's SIP-approved I/M program. The DAQ submitted this SIP revision in response to North Carolina legislation enacted in Session Law 2020-5, House Bill 85, which amended North Carolina General Statute (NCGS) section 143-215.107A(c) to remove these three counties from the North Carolina I/M Program.¹ Specifically, the North Carolina Act requires the elimination of Lee, Onslow, and Rockingham counties from the I/M program, and the retention of the I/M program in 19 counties (Alamance,

¹ The removal becomes effective sixty days after the State's Secretary of the Department of Environmental Quality certifies to the State's Revisor of Statutes that EPA approved the SIP revision.

Buncombe, Cabarrus, Cumberland, Davidson, Durham, Forsyth, Franklin, Gaston, Guilford, Iredell, Johnston, Lincoln, Mecklenburg, New Hanover, Randolph, Rowan, Union, and Wake).

As explained in Section II, below, sections 187(a)(4) and 182(b)(4) of the CAA require the implementation of an I/M program in certain areas classified as moderate nonattainment or higher for the ozone or CO NAAQS.² Lee, Onslow, and Rockingham counties have never been designated nonattainment for ozone and CO, or any other NAAQS, and are currently in attainment for all NAAQS. These three counties were included in the State's I/M program to provide North Carolina with emissions credit for the NO_x SIP Call obligations. *See* 67 FR 66056 (October 30, 2002). The NO_x SIP Call, issued by EPA in 1998, required some states, including North Carolina, to meet statewide NO_x emission requirements during the ozone season (May 1 through September 30 control period) to reduce the amount of ground level ozone that is transported across the eastern United States. *See* 84 FR 8422 (March 8, 2018).

As part of the State's December 14, 2020, submittal requesting removal of Lee, Onslow, and Rockingham counties from North Carolina's SIP-approved I/M program, the State included a CAA section 110(l) non-interference demonstration. Under section 110(l) of the CAA, EPA cannot approve a SIP revision if it would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined by section 171 of the CAA), or any other applicable requirement of the CAA. Section III, below, provides EPA's analysis of the non-interference demonstration.

For the reasons discussed more fully in Section III, EPA is proposing to find that removal of Lee, Onslow, and Rockingham counties from North Carolina's SIP-approved I/M program (and consequently, the removal of reliance on credits gained from I/M emissions reductions from Lee, Onslow and Rockingham counties in the State's NO_x Budget and Allowance Trading Program) will not interfere with North Carolina's obligations under the NO_x SIP Call. This proposed finding is based on a number of federal rules and SIP-approved State provisions

² The I/M program was never a mandatory program pursuant to the CAA for Lee, Onslow, or Rockingham counties.

promulgated and implemented subsequent to the 2002 approval of North Carolina's NOx SIP Call submission. These federal rules and SIP provisions have created significant NOx emission reductions in North Carolina such that the credits gained by the three counties' participation in the I/M program are no longer needed for North Carolina to meet its NOx SIP Call Statewide NOx emissions budget. North Carolina has provided an analysis which supports this proposed finding, and which discusses some of these federal rules and SIP-approved State provisions. See Section III, below.

In addition, North Carolina's SIP revision evaluates the impact that the removal of the I/M program for the Lee, Onslow, and Rockingham counties would have on the State's ability to attain and maintain the NAAQS. The SIP revision contains a technical demonstration with revised emissions calculations showing that removing the three counties from the I/M program will not interfere with North Carolina's attainment or maintenance of any NAAQS or with any other applicable requirement of the CAA. As discussed more fully in Section III, EPA is proposing to find that North Carolina's revised emissions calculations demonstrate that removing Lee, Onslow, and Rockingham counties from the I/M program will not interfere with the State's ability to attain or maintain any NAAQS.

II. What is the Background of North Carolina's I/M program and its Relationship to the NOx SIP Call and the State's NOx Budget and Allowance Trading Program?

A. History of North Carolina's I/M program

The North Carolina I/M program began in 1982 in Mecklenburg County utilizing a "tail-pipe" emissions test. In 1984, Wake County was first added to the program for CO NAAQS violations. From 1986 through 1991 the program expanded to include Cabarrus, Davidson, Durham, Forsyth, Gaston, Guilford, and Union Counties, to address violations of the ozone and/or CO NAAQS. The I/M program was also implemented in Orange County although it was not designated nonattainment for the ozone or CO NAAQS.

In 1999, the North Carolina General Assembly (NCGA) passed legislation (Session law 1999-328) to expand the coverage area for the I/M program to gain additional emission reductions to achieve the 1997 8-hour ozone NAAQS in the State. This legislation expanded the I/M program to add 38 counties between July 1, 2003, and July 1, 2006, for a total of 48 counties.^{3,4} The I/M program in the expanded coverage area used on-board diagnostic (OBD) rather than tail-pipe testing.

On August 7, 2002, North Carolina submitted a SIP revision to amend the I/M regulations included in the SIP at that time to, among other things, expand the counties subject to the I/M program as discussed above, and to require OBD in the subject counties for all light duty gasoline vehicles with a model year (MY) of 1996 and newer. Additionally, the SIP revision proposed to terminate the tail-pipe testing program on January 1, 2006, for the nine counties subject to continued tail-pipe testing of MY 1995 and older vehicles. EPA approved these changes to North Carolina's I/M program into the SIP on October 30, 2002. *See* 67 FR 66056.

In 2012, the NCGA enacted Session Law 2012-199 which required North Carolina and the Department of Motor Vehicles to change the I/M program to exempt the three newest MY vehicles with less than 70,000 miles, and the State subsequently submitted a SIP revision to modify the SIP accordingly. EPA approved this SIP revision on February 5, 2015. *See* 80 FR 6455.

In 2017, the NCGA passed Senate Bill 131, which removed 26 of the 48 counties from the North Carolina I/M program.⁵ On November 17, 2017, DAQ submitted to EPA a request to amend its SIP to remove the 26 counties specified in Senate Bill 131 from the I/M program.

³ The 38 counties added during this time period were Alamance, Buncombe, Brunswick, Burke, Caldwell, Carteret, Catawba, Chatham, Cleveland, Craven, Cumberland, Edgecombe, Franklin, Grainville, Harnett, Haywood, Henderson, Iredell, Lee, Lenoir, Lincoln, Johnston, Moore, Nash, New Hanover, Onslow, Pitt, Randolph, Robertson, Rockingham, Rowan, Rutherford, Stanly, Stokes, Surry, Wayne, Wilkes, and Wilson.

⁴ In 2004, the Charlotte/Gastonia/Rock Hill area was designated as moderate nonattainment for the 1997 8-hour ozone NAAQS, which required Iredell, Lincoln, and Rowan Counties to be included in the I/M program.

⁵ The 26 counties removed were Brunswick, Burke, Caldwell, Carteret, Catawba, Chatham, Cleveland, Craven, Edgecombe, Granville, Harnett, Haywood, Henderson, Lenoir, Moore, Nash, Orange, Pitt, Robertson, Rutherford, Stanly, Stokes, Surry, Wayne, Wilkes and Wilson counties.

This submittal also included a CAA section 110(l) demonstration providing support that the removal of the 26 counties from North Carolina's SIP approved I/M program would not interfere with continued attainment and maintenance of all the NAAQS or with any other applicable CAA requirement. EPA approved this SIP revision on September 25, 2018. *See* 83 FR 48383. In 2019, EPA approved a rolling 20-year timeframe for vehicle MY coverage into the SIP, replacing a specific year-based timeframe for coverage. *See* 84 FR 47889 (September 11, 2019). This action did not change the counties subject to the I/M program. *Id.*

After all the aforementioned changes, the remaining counties in the North Carolina I/M program currently include Alamance, Buncombe, Cabarrus, Cumberland, Davidson, Durham, Franklin, Forsyth, Gaston, Guilford, Johnston, Iredell, Lee, Lincoln, Mecklenburg, New Hanover, Onslow, Randolph, Rockingham, Rowan, Union, and Wake.

B. NOx SIP Call

On August 7, 2002, North Carolina submitted a SIP revision to EPA as a component of its response to the NOx SIP call requirements. As mentioned previously, the NOx SIP Call required some states to meet statewide NOx emission requirements during the ozone season to reduce the amount of ground level ozone transported across the eastern United States. *See* 84 FR 8422 (March 8, 2019). In response to the SIP Call, North Carolina's SIP revision expanded the I/M program from 10 counties to 48, pursuant to North Carolina Session Law 1999-328, Section 3.1(d), and incorporated the OBD test procedure.

The expansion to the I/M program helped reduce certain criteria pollutants and their precursors, including NOx, by identifying and requiring the repair of more high-emitting vehicles. The OBD test helps reduce certain criteria pollutants and their precursors by checking the vehicles increasingly advanced OBD systems to monitor the performance of a vehicle's emissions-related components and provides owners with an early warning of malfunctions through the dashboard "check engine" light (also known as a Malfunction Indicator Light). By identifying degrading parts early through the OBD system, owners of these vehicles can perform

the type of preventative maintenance that extends the long-term durability of expensive components (catalytic converter, fuel injections, oxygen sensors, and transmissions).

While the addition of 38 counties to the I/M program pursuant to Section 3.1(d) of the 1999 Session law was initially ratified to satisfy the 1997 8-hour ozone NAAQS, it was included in the SIP with the new OBD testing procedure to support the establishment of emission credits for North Carolina's NOx budget and trading program. *See* 67 FR 66056 (October 30, 2002). On October 30, 2002, EPA approved the I/M rule revision and North Carolina's use of the I/M program credits for the NOx SIP call budget and trading program. *Id.* The ozone season I/M NOx emissions credit was 914 tons in 2004; 2,078 tons in 2006; and 4,385 tons in 2007 and beyond.

Subsequent to the NOx SIP Call, a number of federal rules, as well as North Carolina SIP provisions, have created significant NOx emission reductions in North Carolina, including ozone season reductions. For stationary sources, including large Electric Generating Units (EGUs), one of these federal rules included the Clean Air Interstate Rule (CAIR) in 2005 and its replacement in 2011, the Cross State Air Pollution Rule (CSAPR).^{6,7} Consequently, any emissions reduction credits derived from the three counties' participation in the expanded I/M program are no longer needed for North Carolina to meet its Statewide NOx emissions budget.

⁶ CAIR created regional cap-and-trade programs to reduce sulfur dioxide (SO₂) and NOx emissions in 28 eastern states, including North Carolina, that contributed to downwind nonattainment or interfered with maintenance of the 1997 8-hour ozone NAAQS or the 1997 fine particulate matter (PM_{2.5}) NAAQS. CAIR was challenged in federal court and in 2008, the United States Court of Appeals for the District of Columbia (D.C. Circuit) remanded CAIR to EPA without vacatur. *North Carolina v. EPA*, 550 F.3rd 1176, 1178 (D.C. Cir. 2008).

⁷ In response to the D.C. Circuit's remand of CAIR, EPA promulgated CSAPR to replace it. CSAPR requires 28 eastern states, including North Carolina, to limit their statewide emissions of SO₂ and NOx in order to mitigate transported air pollution impacting other states' ability to attain or maintain four NAAQS: the 1997 ozone NAAQS, the 1997 annual PM_{2.5} NAAQS, the 2006 24-hour PM_{2.5} NAAQS, and the 2008 8-hour ozone NAAQS. The CSAPR emissions limitations are defined in terms of maximum statewide "budgets" for emissions of annual SO₂ and NOx, and/or ozone-season NOx by each covered state's large EGUs. The CSAPR state budgets are implemented in two phases of generally increasing stringency, with Phase I budgets applying to emissions in 2015 and 2016 and the Phase 2 budgets applying to emissions in 2017 and later years. CSAPR was challenged in the D.C. Circuit, and on August 12, 2012, it was vacated and remanded to EPA. The vacatur was subsequently reversed by the United States Supreme Court on April 29, 2014. *EPA v. EME Homer City Generation, L.P.*, 134 S.Ct. 1584 (2014). This litigation ultimately delayed implementation of CSAPR for three years.

Other federal rules that have created significant NO_x emission reductions in the area of mobile-sources include: the Tier 2 vehicle and fuel standards;⁸ nonroad spark ignition engines and recreational engine standards; heavy-duty gasoline and diesel highway vehicle standards;⁹ and large nonroad diesel engine standards.¹⁰ These mobile source measures, coupled with fleet turnover (i.e., the replacement of older vehicles that predate the standards with newer vehicles that meet the standards), have resulted in, and continue to result in, large reductions in NO_x emissions over time.

In 2002, North Carolina also enacted and subsequently implemented its Clean Smokestacks Act (CSA), which created system-wide annual emissions caps on actual emissions of NO_x and SO₂ from coal-fired power plants within the State, the first of which became effective in 2007. The CSA required certain coal-fired power plants in North Carolina to significantly reduce annual NO_x emissions by 189,000 tons (or 77 percent) by 2009 (using a 1998 baseline year). This represented about a one-third reduction of the NO_x emissions from all sources in North Carolina. *See* 76 FR 36468, 36470 (June 11, 2011).¹¹ The CSA's requirement to meet annual emissions caps and disallow the purchase of NO_x credits to meet the caps led to a reduction of NO_x emissions beyond the requirements of the NO_x SIP Call even though the CSA did not limit emissions only during the ozone season. EPA approved the CSA emissions caps into North Carolina's SIP on September 26, 2011. *See* 76 FR 59250.

North Carolina also has its own SIP-approved State provisions that have helped create significant NO_x emission reductions in North Carolina. The majority of these rules are

⁸ The Tier 2 standards, begun in 2004, continue to significantly reduce NO_x emissions and EPA expects that these standards will reduce NO_x emissions from vehicles by approximately 74 percent by 2030 (or nearly 3 million tons annually by 2030). *See* 80 FR 44873, 44876 (July 28, 2015) (citing EPA, Regulatory Announcement, EPA 420-F-99-051 (December 1999)).

⁹ Also begun in 2004, implementation of this rule is expected to achieve a 95 percent reduction in NO_x emissions from diesel trucks and buses by 2030. *See* 80 FR 44873, 44876 (July 28, 2015).

¹⁰ EPA estimated that compliance with this rule will cut NO_x emissions from non-road diesel engines by up to 90 percent nationwide. *See* 80 FR 44873, 44876 (July 28, 2015).

¹¹ North Carolina indicates that the utilities reduced NO_x emissions by 83 percent as of 2017 relative to the 1998 emissions levels. *See* Letter from Michael A. Abraczinskas, Director of the Division of Air Quality for the North Carolina Department of Environmental Quality, dated July 11, 2018. A copy of this letter is included in the docket for this proposed action.

contained in 15A North Carolina Administrative Code (NCAC) Subchapter 02D, Section .1400, *Nitrogen Oxides*. These rules contain NO_x SIP Call requirements and work in conjunction with the CSA to reduce NO_x emissions in the State.

Together, implementation of these federal rules and SIP-approved state provisions have created significant NO_x emissions reductions since North Carolina's NO_x SIP Call emissions budget was approved into the SIP in 2002. These federal rules and State provisions have significantly reduced ozone season NO_x emissions from EGUs in particular, resulting in overall emissions levels well below the original NO_x SIP Call budget. This last point is illustrated in Table 1, which compares the EGU NO_x SIP Call budget to actual emissions in 2007 and 2017 (the attainment base year), as well as 2018 and 2019. Actual EGU emissions in 2007 and 2017, the attainment base year, were 23 percent (7,274 tons) and 60 percent (18,906 tons) below the NO_x SIP Call budget for EGUs, respectively. Notably, the entirety of the emissions reduction credits from the expanded I/M program (and used by the State in its NO_x emissions budget) only totaled 4,385 tons, of which approximately only 1,000 tons was initially needed to meet the overall budget.

Table 1. Comparison of Ozone Season NO_x SIP Call Budget to Actual Emissions for EGUs

| | 2007 | 2017 | 2018 | 2019 |
|--|-------------|-------------|-------------|-------------|
| NO _x SIP Call Budget, Tons* | 31,451 | 31,451 | 31,451 | 31,451 |
| Actual Emissions, Tons | 24,177 | 12,545 | 13,046 | 12,989 |
| Below Budget, Tons | 7,274 | 18,906 | 18,405 | 18,462 |
| Below Budget, Percent | 23 | 60 | 59 | 59 |

*From EPA's proposed approval of North Carolina's NO_x SIP Call submission. *See* 67 FR 42519 (June 24, 2002).

Further, the State has provided modeling results showing that NO_x emissions will remain below the NO_x SIP Call budgets after removal of the three counties from the I/M program.

Table 2 shows the impact of the estimated ozone season NOx emissions increases due to the proposed changes to the I/M program. Despite this increase, EPA expects NOx emissions in 2022 to continue to be lower than the attainment base year in 2017. This is further explained in Section III.C, below. As noted above, in 2019, EGU emissions were 18,462 tons (59 percent) below the NOx SIP Call budget for EGUs. The proposed change to the I/M program, combined with other recently approved changes to North Carolina's SIP-approved I/M program, would reduce the gap between the budget and actual emissions by 950 tons, or about 5.15 percent, to 17,512 tons below the NOx SIP Call budget for EGUs based on 2019 EGU emissions. Thus, based on this EGU-focused analysis, EPA concludes that the ozone season NOx emissions increase associated with the proposed change to the expanded I/M program will not interfere with North Carolina's obligations under the NOx SIP call to meet its Statewide NOx emissions budget.

Table 2. Impact of NOx Emissions Increases due to Proposed Changes to I/M Program on EGU Reductions and NOx SIP Call I/M Credits

| I/M Emissions Increases from I/M Program Changes | Impact in Tons |
|--|-----------------------|
| Removal of 26 counties (previous action) | 611 |
| Revision to vehicle MY coverage in 22 counties (previous action) | 311 |
| Removal of three counties (this proposed action) | 28 |
| Total NOx Emission Increase | 950 |
| | |
| Amount NOx EGU emissions below budget in 2019 (From table 1 above) | 18,462 |
| Emissions increases from I/M program changes | (-) 950 |
| Amount below budget in 2019 after increases from I/M changes | 17,512 |
| | |
| NOx SIP Call Budget | 31,451 |

III. What is EPA's Analysis of North Carolina's Submittal?

A. Impact on the State's NO_x SIP Call Obligations

North Carolina's December 14, 2020, submittal seeks to remove Onslow, Lee, and Rockingham counties from the I/M program contained in the SIP. This removal consequently removes reliance on the I/M reduction credits gained from these three counties' participation in the I/M program in meeting the State's NO_x emissions budget. North Carolina has indicated that it no longer needs these reduction credits to meet its obligation under the NO_x SIP Call.

In light of the analysis in Section II.B, above, EPA is proposing to find that North Carolina's removal of the three counties from the expanded I/M program contained in its SIP (and the use of I/M emissions reductions generated from those counties as part of the reduction credits in the State's NO_x emissions budget) will not interfere with the State's obligations under the NO_x SIP Call to meet its Statewide NO_x emissions budget. Subsequent to the NO_x SIP Call, the promulgation and implementation of a number of federal rules and SIP-approved State provisions, and in particular those impacting EGUs, have created significant NO_x emissions reductions in the State that are more than sufficient to offset the I/M reduction credits from Lee, Onslow, and Rockingham counties to meet its Statewide NO_x emissions budget.

B. North Carolina's Non-interference Analysis of Removing Three Counties from the I/M Program

Section 110(l) of the CAA requires that a revision to the SIP not interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 171), or any other applicable requirement of the CAA. EPA evaluates section 110(l) non-interference demonstrations on a case-by-case basis considering the circumstances of each SIP revision. EPA interprets section 110(l) as applying to all NAAQS that are in effect, including those that have been promulgated but for which EPA has not yet made designations. The degree of analysis focused on any particular NAAQS in a non-interference demonstration varies depending on the nature of the emissions associated with the proposed SIP revision. There are six NAAQS established to protect human health and the environment. These NAAQS

are CO, lead, nitrogen dioxide (NO₂), ozone, particulate matter (PM) – including PM_{2.5}¹² and PM₁₀,¹³ and SO₂. Considering modern fuel types and the science and technology related to emissions from motor vehicles, EPA does not believe that there would be any changes in emissions of lead¹⁴ or PM₁₀¹⁵ resulting from the removal of the I/M program in Lee, Onslow, and Randolph counties from the North Carolina SIP. Furthermore, EPA does not believe that SO₂ air quality would be threatened given the mandatory use of ultra-low sulfur (ULSD) diesel fuel.¹⁶ Therefore, this section is focused on evaluating air quality for NO₂, ozone, CO, and PM_{2.5}. North Carolina is in attainment for all NAAQS.

North Carolina's December 14, 2020, SIP revision included a non-interference demonstration to support the removal of the I/M program in Lee, Onslow, and Rockingham Counties from North Carolina's SIP-approved expanded I/M program. This demonstration addresses all NAAQS with a focus on ozone (through its precursors NO_x and VOC) and CO, the criteria pollutants addressed by I/M programs. I/M programs are not designed to address lead and SO₂ emissions, and NO₂ is captured generally through the same measures that target NO_x impacts.

¹² PM_{2.5} refers to particles with an aerodynamic diameter of less than or equal to 2.5 micrometers, oftentimes referred to as "fine" particles. Lee, Onslow, and Randolph counties have never been designated as nonattainment for the PM_{2.5} NAAQS.

¹³ PM₁₀ refers to particles with an aerodynamic diameter less than or equal to 10 micrometers, which includes PM_{2.5}.

¹⁴ On November 12, 2008, EPA promulgated a revised lead NAAQS of 0.15 microgram per cubic meter (µg/m³). See 73 FR 66964. EPA designated the entire state of North Carolina as unclassifiable/attainment for the 2008 lead NAAQS. See 76 FR 72097 (November 22, 2011). As of January 1, 1996, the sale of leaded fuel for use in on-road motor vehicles was banned. Therefore, removing the I/M program for Lee, Onslow, and Randolph counties from the North Carolina SIP will not have any impact on ambient concentrations of lead.

¹⁵ On March 15, 1991, EPA completed initial designations for the PM₁₀ NAAQS. See 56 FR 11101. The current primary and secondary PM₁₀ NAAQS are each set at 150 µg/m³ over a 24-hour average, not to be exceeded more than an average of once per year over a three-year period. The entire state of North Carolina has been designated attainment for every PM₁₀ standard. On-road motor vehicles do not emit PM₁₀, therefore, removing the I/M program for Lee, Onslow, and Randolph counties from the North Carolina SIP will not have any impact on ambient concentrations of PM₁₀.

¹⁶ On June 22, 2010, EPA revised the 1-hour SO₂ NAAQS to 75 parts per billion (ppb) which became effective on August 23, 2010. See 75 FR 35520. On February 25, 2019, based on a review of the full body of currently available scientific evidence and exposure/risk information, EPA retained the existing 2010 1-hour SO₂ primary NAAQS. See 84 FR 9866. All areas in the State are currently designated as attainment/unclassifiable for the SO₂ NAAQS. In 2006, EPA finalized regulations that began to phase in a requirement to use ULSD, a diesel fuel with a maximum of 15 ppm sulfur. Since 2010, EPA's diesel standards have required that all highway diesel fuel vehicles use ULSD, and all highway diesel fuel supplied to the market is ULSD. Due to the requirements to use ULSD under the on-road diesel fuel standards, the amount of SO₂ emitted from on-road vehicles is already low. Furthermore, the I/M program in North Carolina's SIP is not designed to reduce emissions of SO₂, and the removal of the three counties from the program will not have any appreciable impact on ambient concentrations of SO₂.

Both VOC and NO_x emissions contribute to the formation of ozone. The rate of ozone formation can be limited by either VOCs or NO_x. When an area has high-NO_x conditions and low-VOC conditions, the rate of ozone production is more sensitive to the number of VOCs and is considered a NO_x-rich regime. Alternatively, when the atmosphere has high-VOC conditions and low-NO_x conditions, the formation of ozone is influenced by a NO_x-limited regime, which means ozone formation is more sensitive to changes in NO_x concentration. In North Carolina approximately 81 percent of the statewide VOC emissions come from biogenic or natural sources, which cannot be controlled. As a result, North Carolina is NO_x-limited for ozone formation, meaning controlling NO_x emissions is a more effective way to reduce the formation of ozone. In the three counties being removed, very few anthropogenic sources of NO_x exist.

EPA used an emissions inventory comparison to determine whether the three counties would maintain the ozone and CO NAAQS after removal of the I/M program. North Carolina provided much of this data, which it later supplemented with additional data for EPA. This is a long-standing approach EPA uses to determine whether an area can maintain the NAAQS and is very similar to the maintenance demonstrations that support the redesignations of areas from nonattainment to attainment and the second 10-year maintenance plans. EPA has not required photochemical modeling or any other modeling analyses to support these demonstrations. In general, EPA compares future year emissions to emissions in a base year with an attaining design value.¹⁷ If the **total** future year emissions for the relevant pollutant(s) are less than the **total** base year emissions, EPA considers that to be a sufficient and reasonable demonstration that the area will maintain the NAAQS because the base year emissions are at a level sufficient to achieve the NAAQS.

As mentioned above, North Carolina's December 14, 2020, SIP revision included a non-interference demonstration to support the State's request to remove Lee, Onslow, and Rockingham counties from North Carolina's SIP-approved expanded I/M program. This

¹⁷ Design values are how EPA measures compliance with the NAAQS.

demonstration includes an evaluation of the impact that the removal of the I/M program for these counties would have on North Carolina's ability to attain or maintain any NAAQS in the State.

For North Carolina's non-interference demonstration, EPA used 2017 as an attainment base year¹⁸ and compared the total emissions of NO_x, VOC, and CO in 2017 to the total emissions of these pollutants in 2022, the year when the I/M program in Lee, Onslow and Rockingham Counties is expected to end. EPA chose 2017 because that point, nonroad, and non-point data was provided in North Carolina's December 14, 2020, submission as it was the most complete data available to the State at the time of the development of the SIP revision. For consistent comparisons, EPA obtained the 2017 mobile emissions from the National Emissions Inventory (NEI). Tables 3, 4, and 5 provide a summary for Lee, Onslow, and Rockingham Counties of the total emissions for NO_x, VOC, and CO in 2017; total emissions for NO_x, VOC, and CO in 2022 with the I/M program; and total emissions for NO_x, VOC, and CO in 2022 without the I/M program. Table 6 shows the three county total for emissions in 2017, in 2022 with I/M and in 2022 without I/M.

As shown in Table 6 below, the total difference in emissions in 2022 with and without the I/M program in the three counties combined is a decrease of 0.47 tpd for NO_x and an increase of 0.20 tpd for VOC. However, the total NO_x emissions in 2022 without the I/M program are 11.38 tpd under the total NO_x emissions in 2017, and the total VOC emissions in 2022 without the I/M program is 2.07 tpd below the total VOC emissions in 2017. The difference in emissions in 2022 with and without the I/M program is an increase of 5.78 tpd for CO. However, the total CO emissions without the I/M program are 18.66 tpd under the total CO emissions in 2017. Because 2022 total emissions without the I/M program are under total 2017 base year emissions, it is reasonable to conclude that removal of the I/M program in Lee, Onslow, and Rockingham Counties will not interfere with attainment or maintenance of the

¹⁸ As shown in Table 1 above, 2017 is one of the years associated with attaining design values for the ozone NAAQS.

NAAQS. Additionally, as shown in Table 7 below, the highest ozone design value associated with 2017 is 5 ppb above the most recently available ozone design value for 2019-2021, thereby providing an additional buffer.¹⁹

Table 3. Lee County Anthropogenic Emissions (tpd)

| Sector | 2017 Emissions | | | 2022 Projected Emissions With I/M | | | 2022 Projected Emissions Without I/M | | |
|-----------------|-----------------|------------|--------------|-----------------------------------|-------------------------|--------------|--------------------------------------|-------------|-------------|
| | NO _x | VOC | CO | NO _x | VOC | CO | NO _x | VOC | CO |
| Onroad | 8.6 | 0.97 | 14.2 | 1.40 | 1.01 | 12.91 | 1.44 | 1.06 | 14.31 |
| Point | 3.0 | 0.63 | 0.84 | 0.12 | 0.74 | 0.06 | 0.12 | 0.74 | 0.06 |
| Nonroad | 1.4 | 0.40 | 6.8 | 0.54 | 0.35 | 6.65 | 0.54 | 0.35 | 6.65 |
| Nonpoint | 0.15 | 2.5 | 1.3 | 0.46 | 2.82 | 0.08 | 0.46 | 2.82 | 0.08 |
| Total | 13.15 | 4.5 | 23.14 | 2.52 | 4.93[^] | 19.70 | 2.56 | 4.97 | 21.1 |

Note 1: For tables 3, 4, and 5, tpd emissions for the 2017 baseline NO_x and VOC were derived from the 2017NEI_Apr2020 with an apportioned emissions factor. Table 6 shows the three county totals. The apportioned emissions factor for each pollutant and data category were developed from EPA's 2016v1 modeling platform, and what North Carolina relied on for the basis in developing the future year emissions projection as part of the SIP submission.

[^] difference in total emission is due to rounding convention.

Table 4. Onslow County Anthropogenic Emissions (tpd)

| Sector | 2017 Emissions | | | 2022 Projected Emissions With I/M | | | 2022 Projected Emissions Without I/M | | |
|-----------------|-----------------|--------------|-------------|-----------------------------------|-------------|-------------|--------------------------------------|-------------|--------------|
| | NO _x | VOC | CO | NO _x | VOC | CO | NO _x | VOC | CO |
| Onroad | 3.69 | 2.18 | 28.9 | 2.27 | 1.92 | 23.65 | 2.35 | 2.02 | 26.39 |
| Point | 0.73 | 0.50 | 1.3 | 0.75 | 0.49 | 0.09 | 0.75 | 0.49 | 0.09 |
| Nonroad | 1.29 | 2.0 | 15.3 | 1.64 | 1.32 | 12.49 | 1.64 | 1.32 | 12.49 |
| Nonpoint | 0.8 | 5.4 | 2.9 | 0.17 | 4.36 | 0.17 | 0.17 | 4.36 | 0.17 |
| Total | 6.51 | 10.08 | 48.4 | 4.83 | 8.09 | 36.4 | 4.91 | 8.19 | 39.14 |

Table 5. Rockingham County Anthropogenic Emissions (tpd)

| Sector | 2017 Emissions | | | 2022 Projected Emissions With I/M | | | 2022 Projected Emissions Without I/M | | |
|---------------|-----------------|-----|------|-----------------------------------|------|-------|--------------------------------------|------|-------|
| | NO _x | VOC | CO | NO _x | VOC | CO | NO _x | VOC | CO |
| Onroad | 3.1 | 1.9 | 23.0 | 2.43 | 1.86 | 18.56 | 2.49 | 1.92 | 20.20 |

¹⁹ With respect to ozone transport obligations, EPA determined through the CSAPR Update that North Carolina does not contribute significantly to nonattainment or interfere with maintenance in downwind states for the 2008 8-hour ozone NAAQS. See 81 FR 74504 (October 26, 2016); See also the Revised CSAPR Update, 82 FR 230676 (April 30, 2021) (reiterating EPA's finding that North Carolina does not contribute significantly to nonattainment, or interfere with maintenance, in any other state with respect to the 2008 ozone NAAQS). Additionally, EPA determined that emissions from sources in North Carolina will not significantly contribute to nonattainment or interfere with maintenance of the 2015 8-hour ozone NAAQS in any other state. See 86 FR 68413 (December 2, 2021).

| | | | | | | | | | |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Point | 2.1 | 3.13 | 2.4 | 3.23 | 1.47 | 0.88 | 3.23 | 1.47 | 0.88 |
| Nonroad | 0.58 | 0.69 | 8.9 | 0.90 | 0.54 | 8.17 | 0.90 | 0.54 | 8.17 |
| Nonpoint | 0.39 | 3.13 | 2.4 | 0.36 | 4.27 | 0.09 | 0.36 | 4.27 | 0.09 |
| Total | 6.17 | 8.85 | 36.7 | 6.92 | 8.14 | 27.7 | 6.98 | 8.20 | 29.34 |

Table 6. Three County Total Anthropogenic Emissions (tpd)

| Sector | 2017 Emissions | | | 2022 Projected Emissions With I/M | | | 2022 Projected Emissions Without I/M | | |
|-------------------|-----------------|--------------|---------------|-----------------------------------|--------------|--------------|--------------------------------------|--------------|--------------|
| | NO _x | VOC | CO | NO _x | VOC | CO | NO _x | VOC | CO |
| Lee | 13.15 | 4.5 | 23.14 | 2.52 | 4.93 | 19.70 | 2.56 | 4.97 | 21.1 |
| Onslow | 6.51 | 10.08 | 48.4 | 4.83 | 8.09 | 36.4 | 4.91 | 8.19 | 39.14 |
| Rockingham | 6.17 | 8.85 | 36.7 | 6.92 | 8.14 | 27.7 | 6.98 | 8.20 | 29.34 |
| Total | 25.83 | 23.43 | 108.24 | 14.92 | 21.16 | 83.80 | 14.45 | 21.36 | 89.58 |

i. Non-interference Analysis for the Ozone NAAQS

EPA promulgated a revised 8-hour ozone standard of 0.08 ppm on July 18, 1997. On March 12, 2008, EPA revised both the primary and secondary NAAQS for ozone to a level of 0.075 ppm to provide increased protection of public health and the environment. *See* 73 FR 16435 (March 27, 2008). On October 26, 2015, EPA published a final rule lowering the level of the 8-hour ozone NAAQS to 0.070 ppm. *See* 80 FR 65292. The 2015 ozone NAAQS retains the same general form and averaging time as the 1997 ozone NAAQS and 2008 ozone NAAQS but is set at a more protective level. Under EPA’s regulations at 40 CFR part 50, the 2015 8-hour ozone NAAQS is attained when the 3-year average of the annual fourth highest daily maximum 8-hour average ambient air quality ozone concentrations is less than or equal to 0.070 ppm.

Lee, Onslow, and Rockingham counties were originally designated unclassifiable/attainment for the 1997 8-hour ozone NAAQS and have continued to attain the standard. On May 21, 2012, EPA designated all three counties as “unclassifiable/attainment” for the 2008 8-hour ozone NAAQS. *See* 77 FR 30088. Finally, on November 6, 2017, EPA designated the entire state of North Carolina attainment/unclassifiable for the 2015 8-hour ozone NAAQS. *See* 82 FR 54232 (November 6, 2017). North Carolina continues to maintain attainment designation statewide for all ozone NAAQS.

As discussed above, the emissions inventory comparison made in Tables 3, 4, and 5 above for the ozone precursors (NO_x and VOC) demonstrates that the removal of the I/M program from all three counties will not interfere with attainment or maintenance of the ozone NAAQS. Table 6 shows the three county totals. Additionally, Table 7 presents recent design values (the measure of compliance with the ozone NAAQS) that have demonstrated attainment of the 2015 ozone NAAQS of 0.070 ppm or 70 parts per billion (ppb). For these reasons, EPA proposes to find that removal of Lee, Onslow, and Rockingham counties from the SIP-approved expanded I/M program would not interfere with maintenance of the ozone NAAQS in the State.

Table 7. Monitor Ozone Design Values (DV)²⁰

| Monitor | 2013-2015 DV (ppb) | 2014-2016 DV (ppb) | 2015-2017 DV (ppb) | 2016-2018 DV (ppb) | 2017-2019 DV (ppb) | 2018-2020 DV (ppb) | 2019-2021 DV (ppb) |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Lee County | NA | 62 | 61 | Shut down* | Shut down* | Shut down* | Shut down* |
| Onslow County | No monitor | No monitor | No monitor | No monitor | No monitor | No monitor | No monitor |
| Rockingham County | 64 | 66 | 65 | 63 | 63 | 60 | 60 |

*The Blackstone monitor in Lee County operated from November 2013 to July 2018 and only collected enough data for the two complete DVs. It was a special purpose monitoring site and was not required to be part of the Part 58 monitoring network and it was subsequently shut down.

ii. Non-interference Analysis for the Fine Particulate Matter (PM_{2.5}) NAAQS

Over the course of several years, EPA has reviewed and revised the PM_{2.5} NAAQS a number of times. On July 18, 1997, EPA established an annual PM_{2.5} NAAQS of 15.0 micrograms per cubic meter (µg/m³), based on a 3-year average of annual mean PM_{2.5} concentrations, and a 24-hour PM_{2.5} NAAQS of 65 µg/m³, based on a 3-year average of the 98th percentile of 24-hour concentrations. *See* 62 FR 36852. On September 21, 2006, EPA retained the 1997 annual PM_{2.5} NAAQS of 15.0 µg/m³ but revised the 24-hour PM_{2.5} NAAQS to 35 µg/m³, based again on a 3-year average of the 98th percentile of 24-hour concentrations. *See* 71

²⁰ All design values in this notice of proposed rulemaking are available on EPA's website at <https://www.epa.gov/air-trends/air-quality-design-values#report>.

FR 61144 (October 17, 2006). On December 14, 2012, EPA retained the 2006 24-hour PM_{2.5} NAAQS of 35 µg/m³ but revised the annual primary PM_{2.5} NAAQS to 12.0 µg/m³, based again on a 3-year average of annual mean PM_{2.5} concentrations. *See* 78 FR 3086 (January 15, 2013).

EPA promulgated designations for the 1997 Annual PM_{2.5} NAAQS on January 5, 2005 (70 FR 943). Lee, Onslow, and Rockingham counties were designated unclassifiable/attainment for the 1997 Annual PM_{2.5} NAAQS. On November 13, 2009, and on January 15, 2015, EPA published notices determining that the entire state of North Carolina was unclassifiable/attainment for the 2006 daily PM_{2.5} NAAQS and the 2012 Annual PM_{2.5} NAAQS, respectively. *See* 74 FR 58688 (November 13, 2009) and 80 FR 2206 (January 15, 2013).

In North Carolina's December 14, 2020, SIP revision, the State concluded that the removal of Lee, Onslow, and Rockingham counties from the expanded I/M program would not interfere with attainment or maintenance of the PM_{2.5} NAAQS. The pollution control systems for light-duty gasoline vehicles subject to the I/M program are not designed to reduce emissions for PM_{2.5}; therefore, removing counties from the program will not have any impact on ambient concentrations of PM_{2.5} NAAQS. In addition, MOVES2014(b) modeling results in the State's SIP revision indicate that removing these three counties from the expanded I/M program would not increase PM_{2.5} emissions. For these reasons, EPA proposes to find that removal of Lee, Onslow, and Rockingham counties from the SIP-approved expanded I/M program would not interfere with maintenance of the PM_{2.5} NAAQS in the State.

iii. Non-interference Analysis for the 2010 NO₂ NAAQS

The 2010 NO₂ 1-hour standard is set at 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. The annual standard of 53 ppb is based on the annual mean concentration. On February 17, 2012, EPA designated all counties in North Carolina as unclassifiable/attainment for the 2010 NO₂ NAAQS. *See* 77 FR 9532.

Based on the technical analysis in North Carolina's December 14, 2020, SIP revision, the projected increase in total anthropogenic NO_x emissions (of which NO₂ is a component) associated with the removal of the three counties from the expanded I/M program ranges from 0.04 tpd (Lee County) to 0.08 tpd (Onslow County) in 2022. However, it is important to note that the total NO_x emissions in 2022 without the I/M program in these three counties decreases by 11.38 tpd from 2017. All NO₂ monitors in the State are measuring below the annual NO₂ standard, and all near road monitors are measuring well below the 1-hour NO₂ standard. For these reasons, EPA proposes to find that removal of Lee, Onslow, and Rockingham counties from the SIP-approved expanded I/M program would not interfere with maintenance of the NO₂ NAAQS in the State.

iv. Non-interference Analysis for the CO NAAQS.

EPA promulgated the CO NAAQS in 1971 and has retained the primary standards since its last review of the standard in 2011. The primary NAAQS for CO include: (1) an 8-hour standard of 9.0 ppm, measured using the annual second highest 8-hour concentration for two consecutive years as the design value; and (2) a 1-hour average of 35 ppm, using the second highest 1-hour average within a given year. The three counties subject to this proposed action have always been designated as unclassifiable/attainment for the CO NAAQS.

As discussed in Section III.B above, the emissions inventory comparison made in Tables 3, 4, 5, and 6 above for CO demonstrates that the removal of the I/M program from all three counties will not interfere with attainment or maintenance of the CO NAAQS. In North Carolina's December 14, 2020, SIP revision, the State concluded that the removal of Lee, Onslow, and Rockingham counties from the expanded I/M program would not interfere with attainment or maintenance of the CO NAAQS. MOVES2014(b) mobile emissions modeling results show a slight increase in CO emissions for each of the three counties of 1.4 tpd (Lee County), 2.74 tpd (Onslow County), and 1.64 tpd (Rockingham County) – 5.78 tpd total for all three counties when comparing emissions with and without the I/M program in 2022. This

increase is not expected to interfere with continued attainment of the CO NAAQS in any of the three counties or adjacent counties, particularly because the three-county total CO emissions in 2022 without I/M is 18.66 tpd less than the total CO emissions in 2017. Furthermore, statewide, the current ambient air quality levels for CO are less than 20 percent of the CO NAAQS. For these reasons, EPA proposes to find that removal of Lee, Onslow, and Rockingham counties from the SIP-approved I/M program would not interfere with maintenance of the CO NAAQS in the State.

IV. Proposed Action

For the reasons explained above, EPA is proposing to approve North Carolina's December 14, 2020, SIP revision. Specifically, EPA is proposing to approve the removal of Lee, Onslow, and Rockingham counties from the SIP-approved expanded I/M program. Additionally, EPA is proposing to find that North Carolina's removal of Lee, Onslow, and Rockingham counties from the SIP-approved expanded I/M program (and the removal of reliance on the additional I/M emissions reductions generated for the NOx Budget and Allowance Trading Program) will not interfere with the State's obligations under the NOx SIP Call to meet its Statewide NOx emissions budget. In addition, EPA is also proposing to find that the removal of Lee, Onslow, and Rockingham counties from the SIP-approved - I/M program will not interfere with continued attainment or maintenance of any applicable NAAQS or with any other applicable requirement of the CAA, and that North Carolina has satisfied the requirements of section 110(l) of the CAA.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. *See* 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided they meet the criteria of the CAA. This action merely proposes to approve state law as

meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of

Indian country, the rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: June 13, 2022.

Daniel Blackman,
Regional Administrator,
Region 4.

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